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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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NATH & ASSOCIATES PLLC
1030 FIFTEENTH STREET, N.W.
SIXTH FLOOR
WASHINGTON, DC 20005

EXAMINER	
SHEIKH, HUMERA N	

ART UNIT	PAPER NUMBER
1615	

DATE MAILED: 06/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/980,492	Applicant(s) DIETRICH ET AL.	
	Examiner Humera N. Sheikh	Art Unit 1615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 February 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2 and 4-47* is/are pending in the application.

4a) Of the above claim(s) *1,2,4-10,16,17,21-32 and 45-47* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *11-15, 18-20 and 33-44* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Status of the Application

Receipt of the Response to Restriction/Election requirement, the Amendment and Applicant's Arguments/Remarks, all filed 02/09/05 is acknowledged.

Applicant's election with traverse of Group II (claims 11-15, 18-20, 33-44) in the reply filed on 02/09/05 is acknowledged. The traversal is on the ground(s) that "the claims of Group I and the claims of Group II possess unity of invention because they share a special technical feature, which is the 'active compound unit'. The difference between the claims of Group I and II is the presence of a pharmaceutical excipient, which is an improper basis for requiring restriction between groups of claims. Likewise, Groups I and II and Groups II and III share a special technical feature of an active compound unit" (see Remarks - pgs. 3-7). This is not found persuasive because the Examiner maintains the position that the claims remain distinct because of the presence of pharmaceutical excipients, which would provide for different properties, characteristics and effects and thus would be capable of supporting a separate patent within the art. The requirement is still deemed proper and is therefore made FINAL.

Claims 1, 2, 4-10, 16, 17, 21-32 and 45-47 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 02/09/05.

Claims 11-15, 18-20 and 33-44 are pending. Claims 11-15, 18-20 and 33-44 are rejected.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 13 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 13, which depends upon independent claim 11 recites, '*one or more further excipients*'. The claim is indefinite since base claim 11 (from which claim 13 depends) lacks recitation of any excipients. The deletion of the term '*further*' in claim 13 would overcome this rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art..
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 11-15, 18-20 and 33-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akiyama *et al.* (US Pat. No. 5,948,773) in view of Shell *et al.* (US Pat. No. 5,972,389).

Akiyama *et al.* teach a pharmaceutical formulation comprising an antibacterial substance and/or an anti-ulcer substance, in that the anti-ulcer substance is a proton pump inhibitor, wherein at least either one of them is formulated into a gastrointestinal mucosa-adherent solid preparation, which comprises a matrix containing a combination mixture of fatty acid esters, lipids and viscogenic agents, whereby lipids include saturated fatty acids having 14 to 22 carbon atoms (*i.e.*, myristic acid, palmitic acid, stearic acid, behenic acid) or salts thereof, higher alcohols having 16 to 22 carbon atoms (*i.e.*, cetyl alcohol, stearyl alcohol), fatty acid glycerol esters which are mono-, di- or triglycerides with the above-mentioned fatty acids, oils, fats, waxes, hydrocarbons – (*i.e.*, paraffin, microcrystalline wax) and phospholipids in combination with pharmaceutically acceptable excipients (see reference column 2, line 16 through col. 3, line 67); (col. 9, line 20 through col. 12, line 7).

The anti-ulcer substance includes H2 blockers and proton pump inhibitors, wherein proton pump inhibitors are preferred. The proton pump inhibitors include benzimidazole compounds such as *lansoprazole, timoprazole, omeprazole and pantoprazole*, for example (col. 3, lines 55-67; col. 9, lines 20-34). The salt of a benzimadole compound is preferably used as a

physiologically acceptable salt. Physiologically acceptable salts include salts with inorganic bases, salts with organic bases and salts with basic amino acids (col. 9, lines 39-49).

The formulation of the invention is used as (1) a combination of an anti-ulcer substance and a gastrointestinal mucosa-adherent solid preparation containing an antibacterial substance, (2) a combination of an antibacterial substance and a gastrointestinal mucosa-adherent solid preparation containing an anti-ulcer substance, (3) a gastrointestinal mucosa-adherent solid preparation containing both an antibacterial substance and an anti-ulcer substance, or (4) a combination of a gastrointestinal mucosa-adherent solid preparation containing an antibacterial substance and a gastrointestinal mucosa-adherent solid preparation containing an anti-ulcer substance. The combination of an anti-ulcer substance and a gastrointestinal mucosa-adherent solid preparation containing an antibacterial substance is preferred (col. 9, lines 53-67).

Akiyama *et al.* teach that the matrix containing a polyglyerol fatty acid ester may also incorporate a lipid. The lipid is a water-soluble substance that serves to control the dissolution rate of active ingredients, exemplified by the previously mentioned lipids (col. 13, lines 12-16).

Example compositions for oral administration include various forms, such as tablets, pills, granules, powders, capsules, syrups, emulsions and suspensions. The granules taught by Akiyama *et al.* have a particle size of up to approximately 1400 microns.

These compositions are produced by known methods, using lactose, starch, sucrose, magnesium stearate and other substances as carriers or excipients (col. 17, lines 25-29). Polymers are taught at column 12, lines 24-46.

Regarding Applicant's claim limitation of 'solid' paraffin, it is the position of the Examiner that since Akiyama *et al.* teach the incorporation of hydrocarbons, such as paraffin

(col. 11, lines 65-67), the term 'paraffin' would include various forms of paraffin, including the solid forms, such as claimed by Applicant.

With respect to the specified triglycerides of claim 42 (*i.e.*, tristearate, tripalmitate, trimyristate), Akiyama *et al.* teach fatty acid glycerol esters, which are mono-, di- or *triglycerides* with fatty acids of mystric acid, palmitic acid and stearic acid or salts thereof and thus meets this claim limitation.

Regarding claim 13, wherein Applicant recites 'one or more further excipients selected from the group consisting of polymers, sterols and basic compounds', the Examiner notes with regard to the inclusion of 'sterol' as an excipient, that sterol will be interpreted as a sterol being present in less than active amounts, since sterols are not considered to be art-recognized excipients.

The examples at columns 18-21 demonstrate various gastrointestinal preparations and methods for producing thereof.

Akiyama *et al.*, as noted above teach various forms for administration (*i.e.*, tablets, capsules, pills, powders, etc.). Akiyama *et al.* do not teach that the active compound units are in the form of *microspheres*. It is deemed obvious to one of ordinary skill in the art to employ active substances in any suitable dosage form (including microspheres) for the delivery of drugs, based on the intended purpose. The equivalency of dosage forms is evident from the reference of Shell *et al.* (see below).

Shell *et al.* teach gastric-retentive oral drug dosage forms for the controlled release and delivery of sparingly soluble drugs, insoluble particulate matter from which drugs are released

and soluble drugs rendered sparingly soluble when combined with a drug modifier, wherein the dosage forms are in the form of *tablets, capsules, microparticulate systems of (proteinoid) microspheres and drug-containing spherical or spheroidal-shaped particles.* The dosage forms are useful for delivering drugs to treat local disorders of the stomach, such as those for eradicating Helicobacter pylori, stomach and duodenal ulcers, gastritis, esophagitis and gastric carcinoma. Suitable drugs that are delivered through these dosage forms include antibiotics and gastric acid lowering agents, such as omeprazole (see reference column 1, line 45 – col. 6, line 55); (col. 9, lines 56-63) and claims.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the microspheres taught by Shell *et al.* within the particulate formulation of Akiyama et al. because Shell et al. teach a gastric-retentive oral drug composition for treating disorders of the stomach (i.e., *h. pylori, ulcers, gastritis*) in dosage forms that include tablets, capsules and microspheres, which provide advantageous properties of protecting the drug from the detrimental environment of the G.I. tract, enhancing drug absorption and altering drug solubility. The expected result would be an improved proton pump inhibiting composition for the effective and beneficial treatment of diseases/disorders of the stomach.

Claim 43 is rejected under 35 U.S.C. 103(a) as being unpatentable over Akiyama *et al.* (US Pat. No. 5,948,773) in view of Shell *et al.* (US Pat. No. 5,972,389) and further in view of Matoba *et al.* (US Pat. No. 5,456,920).

The teachings of Akiyama *et al.* and Shell *et al.* are delineated above. Akiyama *et al.* teach fatty acid glycerol esters at column 10, line 55 – col. 11, lines 67. Akiyama *et al.* do not teach cetyl palmitate fatty acid ester.

Matoba *et al.* ('920) teach a tablet composition comprising active ingredients (*i.e.* antiulcer drugs), oily and fatty substances and excipients, whereby fatty substances taught include fatty acid esters of a monohydric higher alcohol with a fatty acid (wax ester) such as *cetyl palmitate.* Additional fatty acid esters are also taught (see reference column 4, line 58 – col. 5, line 67); (col. 8, line 1).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the fatty acid ester (cetyl palmitate) taught by Matoba *et al.* within the formulation of Akiyama *et al.* because Matoba *et al.* teach the inclusion of cetyl palmitate and also teach cetyl palmitate to be a suitable fatty acid ester which improves releasability of tablets. The expected result would be an effective formulation having enhanced release characteristics for the delivery of drugs in the treatment of disease.

Claim 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over Akiyama *et al.* (US Pat. No. 5,948,773) in view of Shell *et al.* (US Pat. No. 5,972,389) and further in view of Sawhney (US Pat. No. 6,632,457 B1).

The teachings of Akiyama *et al.* and Shell *et al.* are delineated above. Akiyama *et al.* teach hydrocarbons such as paraffin and microcrystalline wax (col. 11, lines 66-67). Akiyama *et al.* do not teach ozokerite.

Sawhney ('457) teaches drug delivery compositions in the forms of tablets, capsules, microspheres and the like comprising release rate-modifying agents that include mineral waxes such as paraffin, microcrystalline and *ozokerite* waxes. The release rate-modifying agent may be used singly or in combination and may be solids or liquids at room temperature (see column 14, line 32 - col. 16, line 2).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate release rate-modifying agents, particularly ozokerite, as taught by Sawhney within the formulation of Akiyama *et al.* because Sawhney teaches the inclusion of ozokerite and teaches ozokerite to be a compatible mineral wax that functions as a suitable release rate-modifying agent. The expected result would be an improved, varied release drug delivery formulation for the treatment of disease conditions.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Humera N. Sheikh whose telephone number is (571) 272-0604. The examiner can normally be reached on Monday through Friday from 8:00A.M. to 5:30P.M., alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thurman Page, can be reached on (571) 272-0602. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have any questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

H. N. Sheikh H. N. Sheikh

Patent Examiner

Art Unit 1615

May 16, 2005